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THE AMERICAN GAS LIGHT JOURNAL

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ENTERED AT THE POST OFFICE AT NEW YORK, N. Y., AS SECOND CLASS MATTER.

BRIEFLY TOLD.

MR. FERRIER'S IDEAS RESPECTING THE OUTLOOK FOR RESIDUALS.—In our current instalment of the official report of the proceedings of the May convention of the Western Gas Association is a paper dealing with "Residuals," prepared by Mr. James Ferrier, of Columbus, Ga., that is well worth studying for the sake of the possibilities that might come out of a practical trial of its not concealed drift. There are many good points in the Georgian's compilation, but those which seem to be the most practical, or, rather, the ones which ought to be the soonest productive of positive benefit to the gas maker who has residuals to dispose of, are his suggestions that tar is of a too low rate in the market, mainly because of the cleverness of the vampires who are managing the tar trust, and that a good, lengthy step would be taken were the gas makers to pay closer attention to the working-up on joint account of the ammoniacal liquor. Mr. Ferrier displays no slowness of thought nor waste of words when declaring, "If it be true that such combinations have been able to dictate prices, the fact cannot be considered highly creditable to the gas industry, employing, as it does, hundreds of millions of capital in this country." And more's the pity, it does seem to be true; for the fact is that rates for tar look to be within hailing distance of the zero line. It cannot be that there is over-production of gas coal tar just now, since the make of coal gas in the country is not any in excess of what it was, say, seven years ago, the natural expansion in the business having been almost wholly taken up by an increased production of water gas, neither can the importation of foreign tars be said to have caused a glut in the home market, as foreign tar cannot be profitably laid down here in competition with American tar on the basis of 4 cents per gallon for the latter. So we must look for the shrinkage cause elsewhere. It has been claimed that the Standard Oil Company, through the successful efforts of its chemists in the refining of the crude oils from the Lima district, is really responsible for the surprising ease existing in the tar market, so far as *quantity* is concerned, in that these oils yield goodly percentages of tars fit to replace the tars resulting from coal gas manufacture; but, on the other hand, those qualified to judge assert that the oil tars cannot in any strict sense be held to be competitors of gas tars, at anything like equal money values for the crude product. In other words, that one gallon of gas tar should be worth anywhere from two to three times more than one gallon of oil tar. If this is so—and we certainly believe that it is true—there is only one reason why gas makers are being hocussed when they make their appearance in the market as tar sellers; and the reason is their own ill-considered apathy. They never have attempted anything like a well-considered plan of concerted action, preferring evidently to hand their wares over to the first comer at his price. Take, for example, Mr. Penn's statement in the discussion which followed Mr. Ferrier's paper. Mr. Penn admits that he receives only $2 per barrel for his tar, the contractors being the same parties who pay $3 per barrel to a neighboring gas maker of Mr. Penn, and all the time Mr. Penn admits his friend and himself are at equal distances from the factory of the tar purchaser and distiller who deals with them both on such unequal terms. It is undoubtedly true, as was remarked by Mr. Ramsdell, that "the price of tar is largely controlled by its location," but we believe it to be equally true that if Mr. Ramsdell directed Mr. Penn's works and those of his 25-mile distant co-laborer as well, Mr. R. would be inclined

to "boycott" the tar purchaser, unless the latter's figures were closer together than $2 or $3 per barrel, "according to location." We earnestly hope, and firmly believe, that something of a positive nature will come out of the investigations of the special committees (appointed, respectively, by the Ohio and the American Associations), who are considering the subject of how best to emancipate the gas makers from the bondage strings of the tar trust; but, meanwhile, if the tar kings continue in their policy of squeezing the tar producers, the latter always have it in their power to wait. Storage receptacles can be arranged for without great expense, and the cost of such construction would soon be recouped by better prices for the stored material. Again, there is the wise suggestion of Mr. Ramsdell that local markets are available, in that they can always be developed—not without some labor and much persistence, however. The same line of argument will apply to the residual ammonia, which material is now being concentrated with facility and profit at many works in different sections of the country.

SEND ON THE LOCATION OF YOUR EXHIBITS AT THE WORLD'S FAIR.—As by far the larger number of those who avail themselves of the advertising columns of the JOURNAL have arranged for a display of their wares at the World's Fair, and as the gas men visiting that great exhibition will naturally be desirous of looking closely at any exhibit connected with their craft and its working, we have determined to publish in the JOURNAL, from the issue of June 12th until the Fair closes, a standing list of the location of the exhibits of those of our advertisers who care to take advantage of our offer. As the scheme will benefit all of our patrons—advertisers and subscribers—we urge upon those interested the necessity of a speedy compliance with our request. Forward to us the location of your exhibits, and we will keep the same constantly before our readers.

BROTHER LITTLETON'S INSIGNIA.—An elk without a set of horns would not be thought much of in his haunts, nor would he roam the forest and glen so fearlessly, for it is popularly held that an elk's antlers are not only things of beauty, but appendages for "business" as well. Be this as it may, certain astute gentlemen of the Committee of Arrangements for the meeting of the Western Gas Association, in looking over the equipment of Secretary Littleton, noticed that although he was of the Elks, no jewel of the Order ornamented his robust person. To notice was with them to act, and now the Man from Quincy counts among his valued treasures a resplendent distinguishing badge that marks him as an Elk of Elks. The presentation was made in Parlor A, of the Hotel Victoria, on the evening of Friday, May 19, Mr. Carl D. Bradley being the spokesman for the committee. Mr. Littleton, although taken completely by surprise, responded in a graceful speech, replete with evidence of his hearty appreciation of the souvenir.

A SELF-EXPLANATORY LETTER.—Mr. W. A. Aldrich, of this city, writing under date of May 31st, says:

To the Editor AMERICAN GAS LIGHT JOURNAL: I have read with much interest the discussion over the proposed amendment to the Constitution of the Western Gas Association by Mr. Ramsdell's committee, and may I be permitted to thank him on behalf of the "employees," whose only disqualification is that they cannot add "Superintendent" after their names. Mr. Lansden says, in the event of Article I., Section 1, being adopted, drivers of wagons would become eligible for membership. Probably Mr. Lansden will admit that as far as eligibility is concerned, there are many superintendents whose proper place should be on the elevated position he mentions. Does Mr. Lansden contend that a man having no knowledge of the gas industry should be admitted a member in preference to the employee who, perhaps, has devoted the better part of his life to the business? We live in an age where practice is away ahead of theory; and I commend to him Mr. Chollar's remark that gas engineering cannot be taught in schools, nor does the practice of it demand a scientific education as a requirement. If the amendment is accepted it will greatly add to the success for which the Society was inaugurated. Mr. Ramsdell's large experience has brought him into contact with men upon whose capacity the success of a gas company has been mainly due, and these men should be no longer debarred from the mutual advantages which the Association affords, and Mr. Lansden need not fear that the Society will suffer any loss of prestige nor loss of dignity in its proceedings.

NOTES.—It is reported that Mr. Jas. M. Starr has sold the Richmond (Ind.) works to a syndicate of Indianapolis and Dayton capitalists, at the price of $210,000.——The authorities of Gloucester (Mass.) have divided the public lighting contract between the Gloucester Gas Light Company and the local electric lighting company.

[OFFICIAL REPORT—REVISED BY THE SECRETARY—CONTINUED FROM PAGE 781.]

SIXTEENTH ANNUAL MEETING OF THE WESTERN GAS ASSOCIATION.

HELD AT KINSLEY'S, CHICAGO, MAY 17, 18 AND 19, 1893.

FIRST DAY—MORNING SESSION.

ELECTION OF NEW MEMBERS.

Mr. Dunbar, from the committee appointed to examine and report on applications for membership, recommended the election of the following persons:

Active.

Averill, G. M., Cedar Rapids, Ia.	Greenough, M. S., Cleveland, O.
Cowdery, R. E., Topeka, Kas.	Hopper, W. H., Philadelphia, Pa.
Dixon, J. A., East Orange, N. J.	Malin, H. A., Joplin, Mo.
Dunbar, C. H., Philadelphia, Pa.	Miller, T. D., Dallas, Tex.
Dunlevey, H. H., Wheeling, W. Va.	Rathell, W. S., Cairo, Ills.
Finnegan, A., St. Louis, Mo.	Thwing, O. O., St. Louis, Mo.
Frost, W. H., Fort Scott, Kas.	Woodward, R., Peru, Ind.

Associate.

Guilford, A. J., Chicago, Ills.	Van Wie, E. G., Chicago, Ills.
Keeler, H. E., Chicago, Ills.	Watson, W. P., New York City.
Payne, F. H., Erie, Pa.	Witherden, G. M., Erie, Pa.

The President—You have heard the report of the committee. What is your pleasure?

Mr. Lansden—I move that the Secretary be instructed to cast the ballot of the Association for the election of the members recommended by the committee. (Carried.)

The Secretary—I cast the ballot of the Association for the election of the gentlemen whose names have just been presented for membership in this Association.

INTRODUCING THE NEW MEMBERS.

Mr. Jenkins—The committee on the introduction of new members would like to have those whose names have been called rise in their places. I take pleasure in introducing to this Association these, our new members, and express the hope that they come in here with us with the full determination of being "one of us," and of getting all the benefits from such membership they possibly can.

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

Mr. Walton Clark read the following report:

To the Western Gas Association—Gentlemen: Your Committee on President's Address for the session of 1893 report as follows:

If President Chollar has not been governed by precedent in the preparation of his address, it is obviously to the advantage of the Association. In that he has left technical matters to be presented by the readers of papers and discussed by you, devoting the time given to the Presidential address to calling your attention to the importance of Association work, and to your duties as members of the Western Association, he has made a departure from time honored practice, upon which we congratulate him and you.

Though President Chollar assumes that the days of austerity in the gas office are past, we feel that all within sound of his voice may profit by a consideration of his characteristic account of the condition of affairs a generation ago and, carrying home with us the spirit of his address, apply the lesson that may be therein learned to the conduct of our own offices with advantage to the relations existing between us and our consumers.

We would particularly emphasize to the individual members of the Association the importance of the idea covered by the President's apt quotation from the Scottish bard:

"A chiel's amang ye takin' notes,
And, faith, he'll prent it."

If, simply for the sake of our hearers, we will not make a strenuous effort to write and talk to the point, stating as facts only what we *know* to be facts, the knowledge that our statements will appear in print, and may later arise to vex us, should have the effect of making us careful and conservative.

We particularly commend to your consideration what your President has said to you of the value of scientific education as an aid to success in our business in this day of hustling competition. Still, as the President has said, a period in the technical school is not necessary to success in gas engineering. Care, thought and determination to succeed are the characteristics that will gain an education for the ambitious young man, even while working for his daily bread.

One of the matters of immediate importance in connection with the technical branch of our industry is the alleged destructive action of electric currents on mains and services. We recommend that the President be authorized to appoint a small committee to have this matter in hand the coming year and report at our next meeting.

What your President has had to say in connection with the utilization of gas and the insuring that it shall be burned to the greatest possible efficiency, while not new, is always pertinent. We hope, with the President, that the time is at hand when we will all give this question of the proper combustion of gas for the development of light the attention its importance demands.

We apprehend that there may be some misunderstanding of the President's meaning in that part of the address referring to the relative importance of the producing half and the selling half of the business. We feel sure that the President does not desire to belittle the value of discussions upon commercial and business topics in the Association. It is doubtless his idea, and we believe the correct idea, that purely technical questions will receive a freer and wider discussion than will questions relating to dollars and cents, or to the conduct of an office; and that, therefore, our time can be devoted with greatest advantage to the discussion of matters purely technical.

In closing, we quote what seems to us the keynote of the President's address, recommending it to you, as more careful consideration of the address has recommended it to us, as an injunction to be remembered and put into practice whenever we have to do with matters relating to the Western Gas Association:

"Let us, therefore, strive to promote its usefulness, maintain its efficiency, and uphold its dignity, and by so doing advance our own interests and enhance the value of the property that we represent."

Respectfully submitted,

WALTON CLARK,
JAMES R. SMEDBERG,
C. R. FABEN, JR } Committee.

On motion of Mr. Boardman the report was accepted and its recommendations adopted.

The President—I will announce the Committee recommended by this report at the next session. We will now listen to a paper, by Mr. James Ferrier, of Columbus, Ga., entitled

RESIDUALS: IDEAS CONCERNING THEM SUGGESTED BY THE OUTLOOK.

In introducing the subject of residuals, I hope I shall not be considered encroaching too much on the domain of our President if I glance briefly at the present status of the gas industry. It has at the present time to deal with two assailants, either of them calculated to cause gas companies to search for the ways and means of reducing the cost of gas. I refer to electric lighting and, in some localities, to the State or municipal government. As regards electric lighting, it is a fact that it is a formidable competitor, and although it has, up to the present, caused no actual decrease in the output of existing companies, it has, to some extent, checked the expansion of the gas industry. It might be well also for gas men to contemplate the fact that many bright minds are occupied in the attempt to solve the problem of directly transforming the undulation of heat into the undulation of electricity, and that its solution in the near future is, at least, a possibility. In the days when gas had no such competitor, the present attitude of certain State and municipal governments might have been intelligible; as it is, their wanton attacks have, in some instances, caused serious losses to investors, who had expected that at least ordinary business ethics would be recognized by those bodies in their dealings with gas companies.

While it is beyond doubt that electricity is one of the great factors of modern progress, it has escaped many that another feature of that progress is a departure from the present crude and wasteful methods of using fuel. It is difficult indeed to calculate the number of valuable chemical combinations—the amount of "energy of position"—which is wasted by throwing coal into a grate or furnace. That this has so long continued suggests "something wrong" on the part of those whose peculiar province it is to foster and promote such a departure—in short, of gas companies. An earlier recognition of the fact that this is their true province might have saved many gas companies from costly experiments in electric lighting, undertaken with the idea that *light* was their sole means of subsistence.

Said the late Mr. Page, at our meeting in Cincinnati, four years ago: "Wait until gas can be put into holder for nothing, then—fuel gas." In these four years have we made any approach towards this ideal? While the use of gas as fuel has been successfully promoted, it must be admitted that the advance made towards putting it into the holder for nothing has been disappointing. Depression has been, and still is, the ruling feature in the residual market, and that in times when it is totally unwarranted by the general state of trade. Much of the depression in prices, notably that in tar, has been laid at the door of combinations among firms and companies handling the product. If it be true that such combinations have been able to dictate prices, the fact cannot be considered highly creditable to the gas industry, employing, as it does, hundreds of millions of capital in this country. When we consider another residual, ammonia, we find still less to boast of. I am not aware how many companies work up their ammoniacal liquor, but I know the number is small, although the necessary apparatus is not costly, and great skill is not required. A larger number concentrate their liquor and often sell it at ridiculously low prices, while their name is legion who throw it away.

In searching for the causes of this state of affairs the conclusion is forced upon us that the scattered and disjointed action of gas companies must be held largely accountable. Gas men have not been wanting in individual energy, but concerted effort there has been none. To illustrate: I have known of two gas companies, not 100 miles apart, selling their tar to the same firm, and that firm paying to one just two and one-half times the price it paid to the other. I have known of coke being sold in one city at from 12 to 15 cents per bushel, while in another some 200 miles distant it was selling at 5 cents. There existed no similar difference in the respective prices of coal in those cities. Some instances, cited by Mr. Egner at the last meeting of the American Gas Light Association, show, with peculiar force, the groping of gas companies with regard to the disposal of their ammonia.

Where is the remedy? This has been the question asked as often as the subject has been mooted, but the inquiry does not seem to have proceeded far. Instruction may be derived from a study of the methods adopted by a kindred industry to our own—petroleum. In it we find companies, backed with the necessary capital, making use of the latest revelation of science in the treatment of their product. The various constituents are separated, and they do not stop there; those constituents are placed on the market, and their uses duly set forth and advertised. (It may be here pertinently remarked that it was with truth said, at a meeting of the American Association, that the State of Ohio alone had use for all the ammonia made in the United States.) Since petroleum was thus treated, the prime commodity, lamp oil, has been greatly reduced in price, and it is beyond question that, were coal products similarly dealt with, while gas companies would probably be gainers, the greatest beneficiary would be the gas consumer.

I may anticipate the objection that will be made to this suggestion—that the magnitude of the project precludes its consideration; but I have another suggestion which is not open to such objection, and perhaps, on the principle that we ought to begin at the lowest rung of the ladder, it deserves to be first considered. It is within the power of gas companies carbonizing as little as from 5 to 20 tons of coal per diem, and within a radius of, say, 200 miles, to select a good railroad center and there establish a plant for the working up of ammoniacal liquor. The capital required would be small, and all could have an interest in it. It could be under the supervision of the gas company at that point, and all companies interested in it could be allowed the net amount realized for the ammonia less the freight paid on the liquor. Even if companies could not be persuaded to enter into such a project, the establishment of an ammonia works and the collection of liquor by a well-situated gas company seems feasible. The start made with ammonia might in time be extended to other residuals, and, in any event, the central company would be a bureau of information, which would, to some extent, prevent the inequalities in prices which I have cited. The solution of the tar question, by using it as fuel in place of coke, would be facilitated, and the Sibyl's remedy for non-appreciation might be applied with similar success.

However much I may be differed from regarding detail, I venture to say that most will agree with me, that in the formation of such *nuclei* lies the solution of the residuals question, and probably of other questions now affecting the gas industry.

Discussion.

The President—You have listened to a very interesting paper, on an important subject. Discussion is now in order, and we shall be glad to hear from everybody on that point.

Mr. Odiorne—I want to ask how it is that some companies manage to get so much more for their coal tar than others can get. I would like to know the secret of it.

Mr. Ferrier—I think I have answered that in the paper—that it is simply because of the fact that there is no confederation among the

companies. One company does not know what another is getting, as there is no means of disseminating the necessary information as to what any particular company is receiving. I think that is the cause.

Mr. Odiorne—I am inclined to think that those high prices are prices which have held over for a year or two back; that they are paid to companies who have contracts running for two or three years, and that no new contracts are now being made at those high prices.

Mr. Ferrier—In the case which I have cited that was not the cause.

Mr. Odiorne—We have tried pretty thoroughly to get good prices, but failed.

Mr. Jenkins—I think in the last year, with at least one-half of the gas companies in the South, there has been a variation of 75 per cent. in the price of coal tar.

Mr. Odiorne—On contracts now being made?

Mr. Jenkins—Yes. I refer to the prices for 1893.

Mr. Odiorne—Can you tell what the highest price now paid is?

Mr. Jenkins—The prices run all the way from $2 and $2.50 to $3 and $3.50 per barrel.

The President—Can we hear something from Mr. Faben on the subject of residuals?

Mr. Faben—I do not know that I can offer anything this morning on this subject, but I would like to hear from Mr. Butterworth.

The President—Mr. Butterworth is called for.

Mr. Butterworth—At the last meeting of the Ohio Gas Light Association a committee was appointed to endeavor to unite the gas companies of the State in an effort to co-operate in securing better prices for tar, by establishing, by purchase or by erection, tar distilleries to be operated by the companies, either as such or by individuals, who would really represent the companies. Under the laws of Ohio one corporation cannot hold stock in another; so that the gas companies as such cannot form a stock company to work up their own tar; but a few individuals can do so, who would still really represent the companies. That committee (of which I am chairman) are now trying to carry out the instructions of the Association in this respect. They have found a good many difficulties, chief among which is the fact that the larger companies of the State have already contracted for their tar for a term of years, and they hold the key to the situation. The smaller companies cannot do much by themselves. We are now getting expressions of opinion from all the gas companies of the State, and when we get them we will come together and talk the subject over. At present matters are in a crude and unfinished condition.

The President—What about ammonia?

Mr. Butterworth—Our instructions contained nothing with reference to ammonia. There is no effort of that kind being made with respect to ammonia.

Mr. Ramsdell—The price of tar is largely controlled by its location. We get less for our tar in Ohio than is paid in our works elsewhere, and we get the highest price where we can create a local demand for it. We are still getting very good prices in two or three of our companies, but a good deal of that tar is being used locally for sidewalks and for work of that character. I think that any market of a local character that we can create will conspire to increase our prices more satisfactorily than anything else we can do, because that keeps it out of the hands of the combination.

Mr. Penn—I think it is a good deal as Mr. Ferrier says. A couple of weeks ago I asked a friend what he was getting for tar, and he said $3, but it was under a contract made a year or two ago. The best price that I could get from the same parties was $2. We live only about 25 miles apart—I am just as near the factory as he is—and I do not know why I should get less than he does, unless it is that the President of the works wants to boycott me. I am satisfied they are giving him a better price for tar than they are offering us. I think if there was a co-operation among gas companies we might be able to get better prices. I asked this same gentleman if he was willing to go with us into this co-operation that Mr. Butterworth speaks about, and he said he was not in favor of going into the combination, which was all he had to say about it.

The President—Can we not hear from Mr. Somerville on this subject?

Mr. Somerville—I wish the author of the paper had said a little more upon this part of his subject. He says: "It might be well also for gas men to contemplate the fact that many bright minds are occupied in the attempt to solve the problem of directly transforming the undulation of heat into the undulation of electricity, and that its solution in the near future is, at least, a possibility." I thought that gas men had a good many facts to contemplate already, and I wondered what in the world this other fact was which was going to be sprung upon us. I would like the gentleman to give us a little more insight into it if he can.

Mr. Ferrier—As regards electricity being an undulation, of course that is a matter that we cannot go into here, but the fact seems to have been established by the experiments of the German physicist Hertz. As regards the transformation of undulations of heat into undulations of electricity, I may say it is well known to most electricians in this and other countries that they can transform electricity directly into heat, but they have as yet failed to directly transform heat into electricity; and that is the great subject of inquiry among electricians at the present day. I wish to say a word in reply to Mr. Ramsdell's remark about a local demand for tar. My experience is that it is oftener pitch than tar which is required. In that case they take the tar and boil it down to the consistency they require, and that means simply a sacrifice of the lighter oils. I think by erecting distilleries we could give them the pitch even cheaper, and still get a fair price for tar.

On motion of Mr. Lansden the thanks of the Association were voted to Mr. Ferrier for his paper.

The Association then took a recess until 2 o'clock P.M.

First Day—Afternoon Session.

The Association met at 2 P.M.

Election of Officers.

Mr. Somerville, Chairman of the Committee on Nomination of Officers, presented the following nominations:

President—E. H. Jenkins, Columbus, Ga.

First Vice-President—I. C. Baxter, Detroit, Mich.

Second Vice-President—Wm. H. Odiorne, Springfield, Ills.

Secretary and Treasurer—A. W. Littleton, Quincy, Ills.

Board of Directors—R. Spencer, Burlington, Ia.; J. W. Stratton, Valparaiso, Ind.; Robert F. Fitz, Elgin, Ills.; James R. Smedberg, Chicago, Ills.; Wm. McDonald, Chicago, Ills.; James Ferrier, Columbus, Ga.; George T. Thompson, St. Louis, Mo.; Benjamin A. Ward, Michigan City, Ind.; B. E. Chollar, St. Louis, Mo.

Jas. Somerville,
Geo. G. Ramsdell,
Frederic Egner,
T. G. Lansden,
J. B. Howard,
} Committee.

The President—You have heard the report of the committee; what is your pleasure?

Mr. Ramsdell—I move that Mr. Somerville, the chairman of the committee, cast the ballot of the Association for the election of the persons named.

The motion prevailed, Mr. Somerville cast the ballot of the Association as directed, and the nominees were declared duly elected officers of the Association for the ensuing year.

Next Place of Meeting.

Mr. Cowdery—The Committee on the Next Place of Meeting met this morning and carefully considered the matter. In the absence of any invitation to the Association to come to any particular place they were at liberty to express their opinions freely as to where the Association ought to go. Some thought that the Association ought to be taken to some Southern city; on the other hand, it was thought possibly that might seem a little too far to some of the members. In that connection Nashville, Tenn., was mentioned; and by others it was thought quite desirable to have the Association go to Kansas City. Another selection was Cleveland, O. After carefully considering these three places the committee decided to report to the Association that in their opinion Cleveland, O., should be selected as the next place of meeting.

The President—You have heard the report of the committee. Are there any remarks or suggestions?

Mr. Lansden—With all due deference to the report of the committee, I wish to submit a name to the Association. I am somewhat opposed to going to the extreme ends of our district; and I would move, as an amendment to the report, that the Association meet next year in Cincinnati, O.

The President—The question before you is on the adoption of the report of the committee as presented.

Mr. Lansden—I withdraw my motion.

The President—After the report has been acted upon—if rejected—you can then come in. Are there any further remarks?

Mr. Egner—I move the report of committee be accepted.

Mr. Somerville—I second the motion.

The President—It is moved and seconded that the report of the committee, and their recommendation, be accepted.

Mr. Ramsdell—Does not that bind us to Cleveland, if the report is accepted?

The President—If it is accepted it binds us to Cleveland. If not ac-

cepted it leaves the question open, but we cannot entertain another motion until after this report of the Committee is acted upon.

Mr. Somerville—I think Cincinnati is a very good place, but as our Committee have reported in favor of Cleveland, I do not see why we should not go there. It is a beautiful place, and we have never been there. I shall vote for the report of the Committee.

The President—It is necessary to act upon the report before we can entertain any other motion. Is there any further discussion? All in favor of adopting the report of the Committee will say, "Aye;" otherwise minded, "No." The motion is carried. Is the Committee on Memorials ready to report?

Mr. Ramsdell—While waiting for that Committee I would like to make a motion. We have all heard with sincere sorrow of the loss of the wife of one of our members. The news reached here just about the time we reached this place. I move the Secretary be instructed to send a telegraphic message to Mr. J. T. Lynn, expressing our sincere sympathy with him in his great affliction.

Mr. Jenkins—I second the motion, and suggest that the vote be taken by rising.

The President—The members will please rise. It is unanimously carried.

RESPONSES.

Mr. Somerville—It has been the custom heretofore for a newly elected President to say something to show whether he will accept the nomination or not. We do not know whether our newly elected President will accept the office, and we would like to hear from him.

The President—Mr. Jenkins, some doubt has been expressed as to whether you will accept the Presidency. Please set the doubt at rest.

Mr. Jenkins (President elect)—It has always been the custom to ask the President elect beforehand whether or not he would have something to say. That was not asked me, and so I did not say anything. But I do want to say to you, Mr. President and members of the Association, that I deeply appreciate the honor conferred upon me. Had I known, two years ago, the duties and responsibilities devolving upon the President of the Western Gas Association as well as I now know them, I think I should have declined the promotion. My friends at that time saw fit to put me in the line of promotion, and I had nothing else to do but yield to their wishes. Coming as I do from one of the smallest companies in this Association, and knowing as I do that there are in the Association many who are more capable of filling the office and better fitted to discharge its duties than I am, you will nevertheless understand, I thoroughly and gratefully appreciate this honor. I ask each and every one of you to assist me in my effort to satisfactorily perform the duties of the office. (Applause.)

The President—Neither Mr. Baxter nor Mr. Odiorne, our Vice Presidents elect, seem to be present, so we cannot hear from them.

Mr. Lansden—I wish to say, as a member of the Nominating Committee, that I had very hard work in inducing the Committee to nominate our Secretary for re-election, and we would like to know if he will accept the office.

The President—We will hear from Mr. Littleton.

Mr. Littleton—Gentlemen, I am very much obliged to you for the honor.

SPECIAL COMMITTEE ON ACTION OF ELECTRIC CURRENTS ON GAS PIPES.

The President—The Committee on President's Address recommended the appointment of a committee to collect data with regard to the action of electric currents on services. I will appoint on that Committee Messrs. Geo. T. Thompson, St. Louis, Mo., Alten S. Miller, Chicago, Ills., and James Somerville, Indianapolis, Ind. If there is no other business in order we will now listen to the paper by Mr. George T. Thompson, of St. Louis, Mo., on

WRINKLES.

Some two years ago one of our technical journals opened an interesting department devoted to contributed hints on details in gas manufacture, and not a few valuable suggestions were in it brought to our fraternal knowledge. On corresponding lines, I now present a few more, of similarly diversified application, in the assurance that almost every member here present has, in the course of his experience, evolved certain "unpatented patents" fitted to his local conditions, and in the hope that this paper may induce a reminiscent mood among us which shall result in a genuine experience meeting, the recollections of which may be stored in the wrinkles of our brains, and perhaps aid on some future occasion in driving gathering wrinkles from our brows.

Adjustable Mouthpiece Support.—In the accompanying sketches, Figs. 3 and 4, Plate I., show a simple form of adjustable support for mouthpieces, or furnace doors, which has commended itself to its users by nearly two years of service. It consists of three parts: First, a 1¼-inch pipe, open at its upper end, and flattened below to attach to a shoe of any convenient form—or in a stage floor retort house, to a beam or plate; second, a T piece formed by welding a 1-inch threaded bolt to a 2x¼x12 inch head, properly bent; third, a 1-inch nut. The support may be easily made by any good blacksmith, is inexpensive—for it may be formed from scraps otherwise useless—and is readily placed and adjusted.

Sight-feed for Oil Retorts.—The sight-feed, for oil when used in a retort process (Figs. 9 and 10, Plate II.), is placed on the line of vertical pipe, just before it enters the mouthpiece. There is a top and a bottom piece of brass, and a brass bushing which screws into the former to give direction to the stream. Each of these pieces is recessed to receive a leather ring, against which the edges of a class cylinder bear, the whole being drawn together with four bolts to secure tightness throughout.

Adjustable Safety Overflow for Hydraulic Mains.—In the design of many forms of tar-gates for hydraulic mains which are in use, one or the other of two essential features has been overlooked, namely, that the take-off should be from the lowest point on the main, and that means should be provided to maintain a pressure on the overflow equal with that within the main. The first of these precautions ensures the removal of the heaviest tars, and so aids in keeping the main clean and in minimizing the weight of the seal, and the second prevents the blowing-out or siphoning of the liquid in case of back pressure. Most of the forms of overflow designed to accomplish these ends are comparatively expensive and must be made expressly for the main to which they are to be attached. The form shown in Figs 1 and 2, Plate I., however, requires no especially skilled labor for its construction, may be applied to any hydraulic, and is easily adjusted by the swinging arm. The fittings it requires are these: ¾-inch—three street ells, one plain ell, one tee, one plug, one right and left coupling, one short and two long nipples, and one short piece of pipe; 2-inch—one 2x¾-inch reducer, two tees, one cross, three plugs, two short nipples, one short piece of pipe, and one long piece of pipe to reach the seal-pot. A 2-inch and a ¾-inch tap or valve may be added if desired.

In putting together, the vertical joints should be left just loose enough to move through the required range of adjustment; all other joints should be screwed home.

Making Connections on Vacuum Mains.—Wrinkle No. 4 deals with methods rather than means. It is the practice of making connections on vacuum mains without the use of bags or plugs, by simply closing the gas inlet to the exhauster governor. As long as the rate of production continues practically uniform, it is obvious that this method may be followed with perfect safety, with no danger of either losing gas or admitting air. It has been done with 20-inch connections, and worked as nicely as when tried with a 2-inch opening.

A kindred principle is frequently followed at stations having two exhausters pumping on a common system of piping, where the best results are obtained by operating one engine by a steam governor only, and al owing the second to respond to all changes in the rate of production, as communicated by an exhaust gas governor.

Locating a Water Leak on a Multitubular Condenser.—Probably the most annoying mishap that can occur to a multitubular condenser is for a leak to develop in the tubes or plates which separate the gas and the water divisions. We have had this experience with an apparatus of the style in which the water surrounds the tubes and the gas passes through them. Figs 12 and 13, Plate III., show the condenser (the water occupying six double compartments, separated at bottom), and indicate the courses which the water fluids follow. The leak, of course, first manifested itself by the weakened ammoniacal product, and soon became so considerable as to necessitate the waste of all the condenser liquor. The bolted plates covering the compartments are so placed that it is necessary to raise two of them to reach any one double water compartment, and this involves the removal of 158 bolts. The leak might have been in a division plate at either end, in a top or bottom tube sheet, or in the tubes themselves in any one of the compartments. It was desirable to locate and stop it with the least possible loss of time, which also meant, of course, the least cost and loss.

At this point a very simple method was employed. A line of pipe leading to a drain runs along the side of the apparatus, with a valved connection to the bottom of each water compartment, for drawing off deposited mud. This attachment was made to assist in the following manner: All mud was first drawn off, then all valves were closed, including that on the main line to the drain. Water was turned on to fill the compartment to the normal height, and then shut off. Then a piece of pipe of a length equal to the vertical height of the water divisions

was attached by a street ell to a cross on the mud pipe, and held by a rope so that it could be swung on the L as a center from a vertical to a horizontal position. After standing over night, the water in the leaky compartment had all escaped down to the level of the break. The swinging pipe was then used as a gauge, the valves on the several water divisions being opened one at a time, showing all compartments full but one, and thus infallibly indicating the leaky section, as well as the height at which the break existed.

convenient size may be made by cutting a thread 2 inches long on one end of a ¾ inch pipe about 8 inches in length, running a 1x¾ inch bushing upon this, welding a plug in the lower end, and then screwing the bushing into a 1 inch hole in the main pipe to be tested. A cap is loosely screwed on the top, its only office being to prevent circulation of air within the holder.

A cheap and convenient thermometer to use with this case is the paper cylinder "Dairy" form, costing from 20 to 30 cents.

"WRINKLES."

PLATE I.

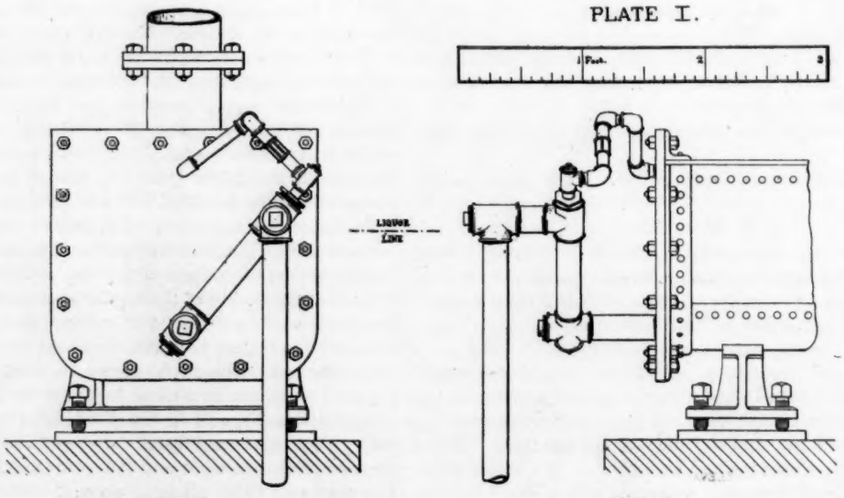

FIG. I. FIG. II.

ADJUSTABLE SAFETY HYDRAULIC-MAIN OVERFLOW.

ADJUSTABLE MOUTHPIECE SUPPORT.

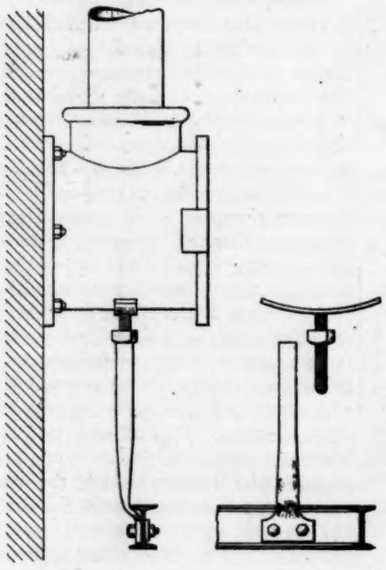

FIG. III. FIG. IV.

PUMPING DEVICE FOR LIQUOR CISTERNS.

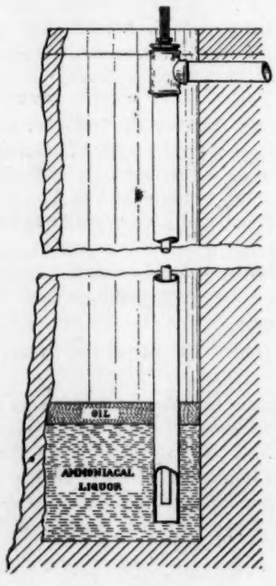

FIG. V.

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The same principle has since been used in filling a station meter, to show the quantity of water contained until it reached the height of the glass gauge.

Thermometer Case for Main Pipes.—The pipe thermometer holder shown in Fig. 8, Plate II., is comparatively widely known; but the fact that many small works are wholly without means of knowing when their condensers are doing their duty and when overdoing it, or what proportion of their gas unaccounted for is due to shrinkage between station and consumer's meters, prompts me to risk reintroducing it. A

Quieting a Groaning Station Meter.—A crying station meter is far from a perennial joy, though it may become such when its wail is stilled. We underwent an experience with a groaning meter a few months since, which is instructive in retrospect, though not pleasant while it lasted. The meter began loudly proclaiming the want of lubricant on its journals, and we succeeded in quieting it by lowering the water line to about the center of the case, covering the surface of the water with a heavy oil, and allowing this to permeate all portions of the metric anatomy. But this answered only for a time, for we, of course, went

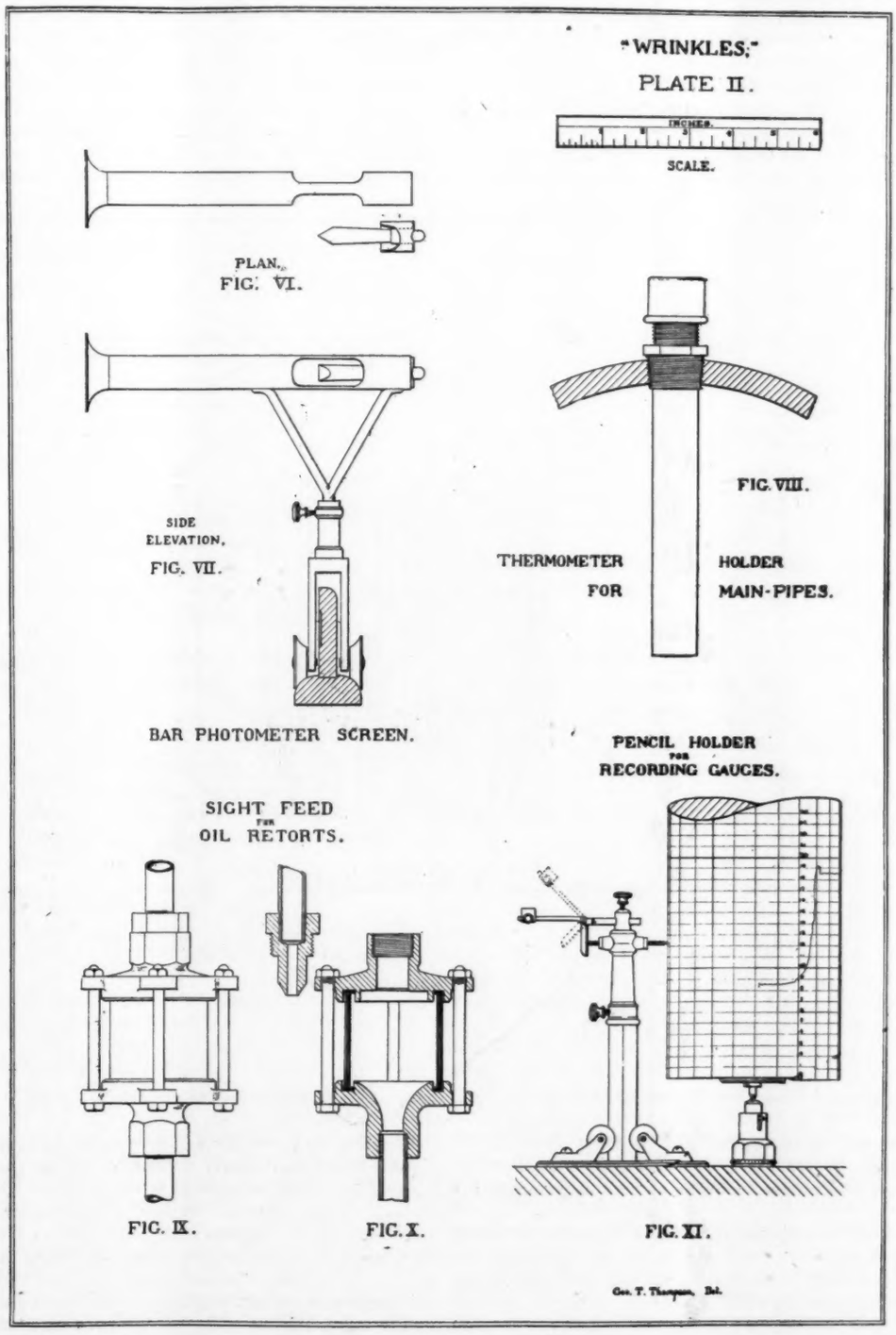
back to the proper water line as soon as possible, and then the moaning recommenced.

The remedy was found in pumping into the case below the water line a quantity of soft soap in solution in hot water. All the liquid in the meter was thus converted into a tolerably good lubricant, and the wailing ceased, and has not again been heard. The soap is that known as Fairbanks' "No. 3," "crude soap," or "oly." Any soft soap will answer as well, however. At first the solution may discolor the water in the gauge glasses, but if the gauge water is changed once or twice this will not be repeated; nor are the gauges so difficult to clean as when oil is used.

Putty Joints for Works' Mains.—The delay, inconvenience and cost of making repairs or changes on works' apparatus connected to mains with bell and spigot joints are much decreased by substituting putty for lead in the bells, after yarning. Especially is this applicable to the exhausters and station meters, which are more likely to require detaching from their connections than the other apparatus.

Pencil Holder for Registering Gauge.—Fig. 11, Plate II., exhibits a device to ensure even lines on the sheets of recording pressure or exhaust gauges, regardless of any irregularities in the surface of the carrying cylinder. The small weight may be adjusted within a range of leverage entirely sufficient, and with a medium pencil a regular line is assured, even in damp weather, when a pencil held to its work by a spring will often tear the paper.

Photometer Screen.—After some experimenting, a photometer screen has been contrived which is simplicity itself—a ¾ inch tube and a piece of chalk. The tube is about 8 inches long, has its sides cut away for a length of about 2 inches near one end, and is supported in any convenient manner from the bar carriage, so that the centers of the openings are in line between the lights. An ordinary white crayon is cut to an edge on one end, at an angle of about 90°, and the sides of the cut surfaces are rubbed on paper to remove all scratches and to make the edge sharp. The chalk is then slipped into the tube with the edge vertical and toward the observer. It receives light through the side openings in



the tube, and presents sharp contrasts of illumination until the proper point is reached on the bar, when the line of the edge will disappear, and the end of the chalk appear flat. So satisfactory has this screen been found, that it has superseded the other styles at both of our stations.

Safety Device, Ammoniacal Liquor Cisterns.—In storing ammoniacal liquor in cisterns, preparatory to shipment, it is often customary to cover the surface of the liquid to a depth of two inches or so with a moderately heavy oil, to prevent the loss of free ammonia. When so doing, care must be taken in pumping from the well, that the oil is not removed with the liquor. The attachment outlined in Fig. 5, Plate I., was devised to make this impossible.

A small pipe (¼-inch is amply large), open both top and bottom, is placed within the one leading to the pump; its lower end being located above the lower end of the suction pipe, a distance equal to or slightly exceeding the depth of oil on the surface of the liquor. The small pipe, though communicating above with the open air, yet is sealed below in the liquid and so does not affect the pumping of ammoniacal liquor; but when the surface of the liquid is reduced to a level with the lower end of this small pipe, the vacuum is broken, and nothing more can be raised.

In fitting up this device it is obviously desirable to make the vertical pump supply, through which the small pipe passes, one size larger than would otherwise be necessary. The inner pipe may, of course, be adjusted to stop the pumping at any point desired.

Trench Work in Main Laying.—In laying street mains or services, especially where obstruction exists on the proposed line, the use of three T-pieces, of which a description follows, has been found of great convenience in readily obtaining the line of uniform fall. The tees are of wood, the cross pieces being made all of the same size, and set square with the uprights. Two of the latter are just equal in length, but the third one is longer by a distance equal to the thickness of the cross-piece. From 4 to 5 feet is a handy length for the uprights. In using them, the two equal tees are set vertically, one at each end of the line, their feet resting in the ditch at the depth desired for a bottom. To find the line for the bottom at any point between these, hold the third T vertically in the ditch at the place in question, and deepen the trench, following it with the T, until sighting across the top of that at one end, this middle one just cuts off the light between its under side and the top of the one at the opposite end. Trench work may thus be carried on past mortar and brick piles, intersecting streets, railway crossings, rock bottoms, or any temporary obstructions, with confidence in the certainty of being able to join the trenches later, and have all continuous. Whether working with or without instruments, the T-pieces will be found valuable.

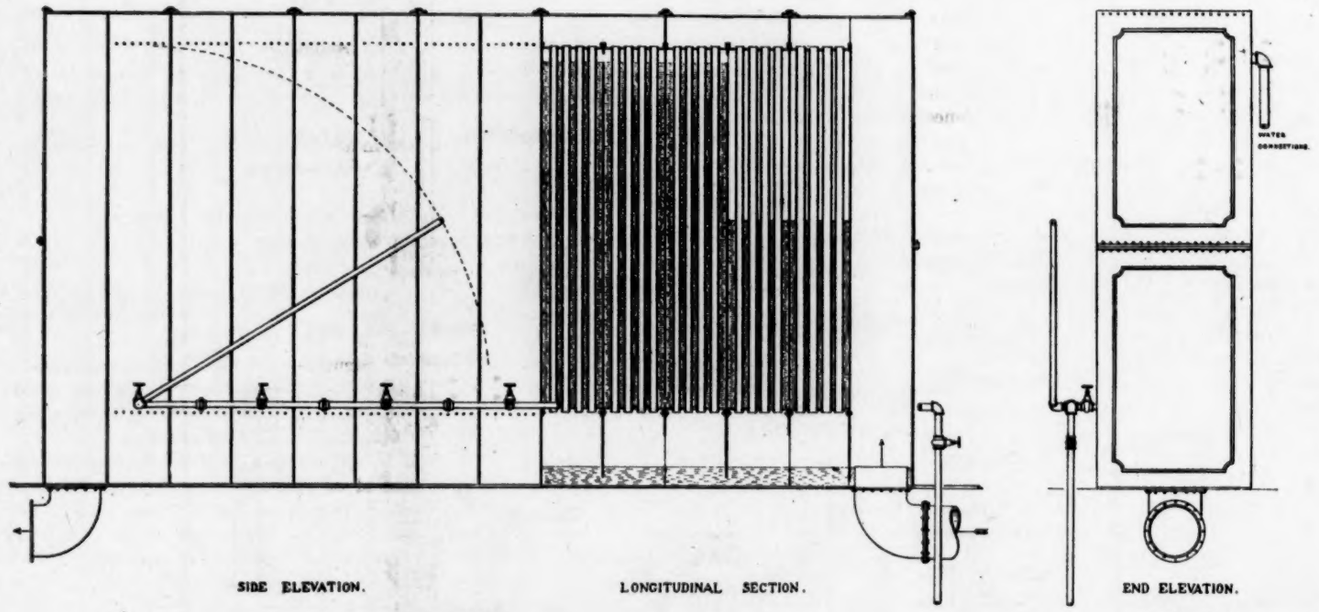
Preventing Freezing in Exposed Supply Pipes.—Stoppages in exposed piping on train sheds, bridges, etc., in freezing weather, may be effectually prevented by passing the gas from a meter outlet through a box fitted with a tray carrying quicklime. The box should have a removable cover, and is preferably made of sufficient size to contain lime for an entire season. The quicklime being broken into small bits, seizes upon all moisture in the gas with avidity, slaking the lime, and leaving nothing congealable in the gas beyond this desiccator.

"WRINKLES."

PLATE III.

LOCATING A WATER LEAK
ON A
MULTI-TUBULAR CONDENSER.

SCALE.



SIDE ELEVATION. LONGITUDINAL SECTION. END ELEVATION.

FIG. XII. FIG. XIII.

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Gas Engine Equalizer.—Where a gas engine is in use in a building lighted by gas, particularly where both burners and engine are fed from a small main pipe, annoyance is often caused by the jumping of the lights. To set a governor on the illuminating connection is an expedient which readily suggests itself, but this is not always wholly effective. In a case I have in mind, the remedy was found in placing at the outlet of the engine meter a holder, adapting an old 5-foot meter prover for the purpose, to act as a cushion between the engine and the main. The holder was counterweighted to "give and take" between strokes of the engine, and not only wholly stopped the fluctuations of the lights, but also proved of decided advantage to the operation of the engine, in serving as a reservoir for gas between the strokes.

Conclusion.—Credit for the originality of the foregoing wrinkles should include the names of Messrs. B. E. Chollar and Arthur Finnegan. In none of the principles outlined is anything left wholly to theory, for all are in practical employment or operation.

In conclusion, I offer the suggestion that a "Wrinkle Department" in our Association would bring to us as contributors many of our members who have never appeared on the paper lists, yet who could without

doubt tell us of valuable contrivances or methods used by them which would be new and serviceable to us, yet which they might not consider sufficient in scope to warrant expansion into a regular paper. Such a department would supplement our Question Box very effectively. Contributions might be signed or anonymous, and might be read by the authors or by the Secretary, as the contributors chose. If this suggestion be favorably received, and the department instituted and continued, I feel sure that it will come to be second in interest to no other feature of our conventions.

Discussion.

The President—We have heard a very interesting paper. Any other "Wrinkles" that any of you have to present will be in order in the discussion.

Mr. Jenkins—The governor spoken of by Mr. Thompson for gas engines can be used for any engine. Some years ago a 2-horse power gas engine, placed in Goshen, Ind., could not be operated. I was then located at Elkhart, and I was asked to go to Goshen to see what was the matter with the engine. I found their only supply was a ¾-inch pipe—it was in the middle of winter, the frost was 4 or 5 feet in the ground, and we were unable to dig down and put in a proper size service. A compensator, similar to the one described by Mr. Thompson, was put on this ¾ inch pipe, and it answered every purpose until spring came, when a larger service could be put in.

Mr. Ramsdell—I want to ask a question about Fig. 2 of Plate I. I have used this same device, gotten up in a little different form, but practically the same thing—taking the outlet and inlet on the top and bottom of the main instead of in the end. When I first put it up we had been having a great deal of trouble in our hydraulic mains, by reason of the thick pitch accumulating, and I do not think we were ever troubled with any thick tar afterwards. So I supposed it was a sure preventive. Since that time I have had the same device put on another hydraulic main, in which it did not work. The trouble continued. I would like to ask Mr. Thompson if, from his experience, he can suggest why it did not operate.

Mr. Thompson—Without knowing more about the details I do not know that I can answer you. How long was the hydraulic?

Mr. Ramsdell—One section.

Mr. Thompson—Had it any fall toward the outer end?

Mr. Ramsdell—That I cannot answer. I do not know.

Mr. Thompson—Were you running exceptionally high heats?

Mr. Ramsdell—No.

Mr. Thompson—The principle is perfectly correct, and there is nothing new in the principle of having the tar brought from the bottom with a pressure regulator at the top. That is used in a number of other installations. One advantage of this was its simplicity of construction. As the principle worked perfectly in one instance, I do not know why it did not in the other. Were both pipes clear?

Mr. Ramsdell—Yes.

Mr. Thompson—And it failed to work from the first?

Mr. Ramsdell—It was a question whether it worked from the first or not.

Mr. Thompson—I cannot aid you. The principle is correct, unquestionably.

Mr. Bredel—The principle is correct, but the practice is not. It may not drain out the water, and that is the reason you keep your heavy tar at the bottom.

Mr. Thompson—I do not understand you.

Mr. Bredel—The tar made is of different specific gravities, and you want to keep your water at a certain height. Tar is generally considered to have a specific gravity of 1.20, while water is 1.15 and 1.30.

Mr. Thompson—It is true you can regulate the height of the seal with such a contrivance as this; but what you have to regulate on the outside of the main is the weight of the seal. At the outlet and overflow you will always have tar. Within you will have heavy tar, light tar and ammoniacal liquor; consequently, while the weight will be the same within and without, your height is likely to be greater within than without, and when you put the main in operation you must adjust it to the point where there will be practical uniformity in the character of your overflow.

Mr. Bredel—I have never been able to do it. Of course it depends altogether upon the temperature of the outer air and the tar you make. The moment your temperature goes below 60° you are in trouble.

Mr. Thompson—Do you think it cannot be done?

Mr. Bredel—Yes.

Mr. Thompson—I know that it is done.

Mr. Bredel—It may be done in St. Louis, or it may be done where the hydraulic main is kept warm, but it cannot be done where the hydraulic main is kept cold. Another result will be stoppages from naphthaline in the overflow pipe. I have had experience with the same apparatus, and know that it cannot be successfully used except under certain conditions, and those conditions are very limited.

Mr. Thompson—What form do you recommend for the overflow?

Mr. Bredel—If I knew of any very successful overflow I would recommend it, but I do not know of any.

Mr. Thompson—Then you consider that this is the best of any that you are acquainted with?

Mr. Bredel—No; I don't consider this at all good. It is a thing which cannot be worked successfully under different atmospheric conditions.

Mr. Thompson—Mr. Ramsdell's experience shows that it did work in one case.

Mr. Bredel—Under certain conditions it will work, and under certain conditions it will not work.

Mr. Thompson—Our endeavors must be toward the direction of making it work by keeping the main warm; and that is practicable.

Mr. Somerville—I would like to say as to using this device as an equalizer that I had some trouble when I first started gas engines by reason of the oscillation of the lights coming from the same pipe; but we adopted a much simpler thing than that. I happened to think about an old 10-light meter I had, and I attached it to the supply pipe and the oscillation stopped. It was effectual. If anyone is troubled with this oscillation, just put on an old meter by the side of the new one, and there will be no more trouble.

Mr. Boardman—Was it a dry or a wet meter?

Mr. Somerville—A dry meter.

Mr. Thompson—Was that because there was electricity in the containing vessel, or because the gas in it acted as a cushion?

Mr. Somerville—The oscillation stopped, and I had no more trouble after putting on the old meter.

Mr. T. D. Miller—We have had trouble in finding how high up a condenser leak is. I am under the impression that I shall have to take out the pipe. I would like to know if there is any method of locating the particular pipe.

Mr. Thompson—Is it similar in form to the one shown in this sketch?

Mr. Miller—No; it is tubular.

Mr. Thompson—All in one section?

Mr. Miller—The gas goes up one side and down on the other.

Mr. Thompson—It is in two compartments?

Mr. Miller—Yes, the gas chamber is.

Mr. Thompson—Have you found out which compartment it is in?

Mr. Miller—I think there is but one water compartment, from the fact that the water inlet and the outlet are on the same side.

Mr. Thompson—You have no circulation of water. This is a condenser arranged on the obviously desirable principle that water and gas circulate in opposite directions throughout the entire length; and where you have no circulation of water this device would not apply at all.

Mr. Cathels—With regard to the freezing of supply pipes, I would like to call attention to a method of prevention or remedy that was adopted by the late Mr. Forstall. He always ran service pipes in as straight a line as possible from the main to the meter. The same principle is adopted now by the Chicago Gas Light and Coke Company, and I adopted it myself after being advised to do so by Mr. Forstall. The remedy consists in placing a 4-inch sewer drip in the curb wall, running the service pipe straight through that, packing each end of the 4-inch sewer drip with oakum, leaving an air cushion in the center. That keeps the cold from striking the pipe. The metal absorbs the cold, and carries it along, and that keeps the cold from going from the wall into the service pipe. In addition to that, if I am running a 1¼-inch service, I put in a 1¼-inch service cock in the area way. I find that in locating a frozen pipe, 9 out of 10 are frozen at the service cock; and the brass, being contracted at that point, takes up the cold, and that is the weak point. I think it always advisable to put in a cock larger than the service pipe; and by using this air cushion in the wall it greatly helps in preventing the freezing of pipes.

The President—Mr. Thompson has another wrinkle which is not in the paper, and which he has not shown yet.

Mr. Thompson—I have just received from St. Louis the following message: "Feeder, fluid, alarm, muddy, nephew, jaw, raw, clear, good." That tells me the make at our works yesterday; the sendout; the yield per pound; the oil used; the illuminating power; the fuel coke used per 1,000 feet; the fuel coal used per 1,000 feet; the condition of the weather; the general conditions at our works—whether good or bad. The principle of the cipher is simply this: Two consonants are employed to designate each figure—each numeral, from 1 to 0, as follows:

1	2	3	4	5	6	7	8	9	0
S	N	M	R	L	T	D	F	C	P
B	J	K	G	V	Z	Q	X	H	W

There are two equivalents for each figure, in consonants, so that you have the choice of two consonants in indicating any single figure. The figures going to make up this report are as follows: "Feeder," signifies 874; that is, the figure 8 is the equivalent of either F or X; the figure 7 is the equivalent of either D or Q; the figure 4 is the equivalent of either R or V. Those consonants can be combined with vowels *ad libitum* to form any dictionary word. In translating, the vowels are disregarded, and only the consonants taken into consideration. The order of the words indicates their value. For instance, the first word indicates the amount of gas made in 1,000 feet; the second word indicates the amount of gas sent out; the third indicates the yield per pound; the fourth the quantity of oil used; the fifth the illuminating power; the sixth the fuel coke per 1,000 feet; the seventh the fuel coal per 1,000 feet; the eighth the condition of the weather; the ninth indicates the general condition at the works—as good or bad; and the tenth is for additional words which can be used for any remarks desired.

Mr. Ramsdell—I would suggest that the recommendation of Mr. Thompson, as contained in the last clause of his paper, that a "Wrinkle Department" be opened, be referred to the Executive Committee, which will meet some three months before our next meeting, and they can then announce the plan for such a department.

The President—I was going to suggest the establishment of such a department, and the appointment of Mr. Thompson as its superindent.

On motion of Mr. Somerville the thanks of the Association were voted to Mr. Thompson for his paper.

Report of Committee on Memorials.

The President—Is the Committee on Memorials ready to report?

Mr. Butterworth read the following report, which was, on motion of Mr. Boardman, seconded by Mr. Jenkins, received, and the recommendations adopted by a rising vote:

"Since the last meeting of this Association it has been made poorer by the death of five of its members, namely:

One Honory Member—Mr. Geo. A. McIlhenny, President Washington Gas Company, Washington, D. C.

Three Active Members—J. F. Rodgers, Sup't Gas Co., New Decatur, Ala.; Geo. W. Ewing, Sup't East St. Louis Gas Works, East St. Louis, Ills.; H. S. Walbridge, Vice-President Gas Light and Coke Company, Toledo, Ohio.

One Associate Member—John J. Griffin, President J. J. Griffin & Co., Philadelphia, Pa.

As our blessings brighten as they vanish, so does our appreciation of our brothers who are thus from time to time taken from us. We are suddenly made to realize, more clearly perhaps than ever before, the excellence of their characters, and we feel a pang of regret and self-reproach that we did not honor and love them more nearly as they deserved while they were with us.

While much could be said in eulogy of the personal and professional merit of those members who died during the year, the Committee must content itself with the submission of the following resolutions:

Resolved, That we hereby testify to the love and respect in which we hold the memories of those members whom we have recently lost, and to the fact that we are the better for having known them in life.

Resolved, That we tender to the families of these deceased members our sincere sympathy for them in their bereavement, and that the Secretary be instructed to transmit to them a copy of these resolutions.

Irvin Butterworth,
R. R. Dickey,
F. M. Doan,
} Committee.

[To be continued.]

Carbureted Water Gas Apparatus.

[A paper read by Mr. A. G. Glasgow before the Incorporated Institution of Gas Engineers.]

The manufacture of carbureted water gas, dating commercially from 1875, has grown in these 18 years to an extent that it embraces two-thirds of all the gas manufactured in North America, while a sufficient quantity has for some time been daily supplied to the inhabitants of London. So phenomenal a development naturally suggests that the manufacturing apparatus soon reached a degree of efficiency leaving small room for improvement. Such, however, was by no means the case; and it is the purpose of this paper to point out, in very general terms, some of the features of the apparatus that have quite recently felt the hand of progress.

A critical observer of the operation of water gas apparatus as constructed in the past cannot fail to notice (1) the waste energy in the blast products escaping to the atmosphere; and (2) the quantity of cinder taken from the generators during the process of cleaning the fires. While more minute examination discovers (3) a large, but apparently unavoidable, excess of steam admitted to the generators over that actually converted into gas; and (4) the need for improvement in the treatment of the enriching oil, evidenced by the uneven heating of the carbureters, the carbonization and crumbling of the checker bricks first receiving the oil, and the large percentage of condensable tarry vapors in the gas when crude oils or heavy distillates are used. A change from anthracite coal to the use of gas coke in the generators further develops (5) a marked reduction in the output of the apparatus, aggravated by a considerable increase in the carbon dioxide present in the gas.

The foregoing being generally recognized as the distinctive features unfavorable to economy in water gas manufacture, recent improvement has naturally followed these paths. Any systematic scheme of improvement requires a perfect knowledge of present conditions. The analytical study, necessary to this end, of the conditions of water gas manufacture has, during the past several years, been searching and thorough.

In 1890 complete determinations were made of the thermal losses in the conversion of the staple supplies into carbureted water gas; and as this work furnished a scientific basis for economic progress, and displays concisely the conditions of working generally existing to day, an epitome of the writer's paper read before the American Gas Light Association in that year is given in the following table. The results were from a single setting, newly constructed, making continuously between 400,000 and 500,000 feet of gas daily, under the most careful manipulation.

Considering the unaccounted for energy as carried away in the excess steam, there was a necessary waste of 10,091 ÷ 23,500, or 43 per cent. of the total combustible; the absolute efficiency of the apparatus, considered as a heat engine, being 57 per cent. The table shows that, under the most advantageous conditions, 5.115 lbs. of combustible (equivalent, say, to 5½ lbs. of coke) were lost in the blast gases. It must be borne in mind that this represents merely the loss due to the sensible heat of these products of combustion. With (as is usually the case) carbon monoxide escaping to the atmosphere the waste at this point may be greatly increased, the total, 33½ lbs. of fuel shown above easily growing to 45 or 50 lbs. Extravagant results in fuel can generally be traced to this cause.

Distribution of Energy per 1,000 *Cubic Feet.*

Total generator fuel	33.4	—
Ash and unconsumed coal recovered	9.9	—
A.—Total combustible (carbon)	23.5	340,750
B.—Energy of the carbon monoxide produced	6.280	91,043
C.—Energy absorbed in the decomposition of the steam	6.243	90,533
D.—Difference between the sensible heat of the escaping illuminating gas and the entering oil	1.852	26,864
E.—Heat carried off by the escaping blast products.	5.115	74,152
F.—Heat lost by radiation from the shells	0.858	12,454
G.—Heat carried away from the shells by "convection" (air currents)	1.082	15,696
H.—Heat *rendered latent* in the gasification of the oil	0.886	12,841
I.—Sensible heat in the ash and unconsumed coal recovered	0.256	3,712
Total energy accounted for	22.572	327,295
Unaccounted for (4 per cent.)	0.928	13,455

The energy accounted for may be divided into—

Energy utilized	13.409 lbs.
Energy wasted	9.163 lbs.

It is essential, therefore, that the apparatus be so designed that a perfect working balance is maintained between the demand for energy in the fixing chambers, and that supplied by the generator when on blast, in spite of wide variations in the quality of fuel. This equilibrium involves, broadly speaking, a correct relation between the area and depth of the generator fire and the blast pressures throughout the apparatus; and gradual development upon these lines has finally resulted in overcoming completely the waste due to the presence of carbon monoxide in the blast products. The total waste in the stack gases is, therefore, limited to the 5½ lbs. of coke represented by their sensible heat. While it does not seem a difficult problem to apply this waste

energy to useful effect, none of the numerous devices hitherto tried have yet been commercially successful.

Referring again to the table, it will be seen that, of the total 33½ lbs. of fuel, 10 lbs. are taken from the fire during cleanings, representing about 2 lbs. of ash and 8 lbs. of fuel. This large accumulation is due to the fact that the steam, being always admitted to the bottom of the fire, cools the lower stratum below the point of ignition, so that the subsequent blast, instead of rekindling, chills it almost to the temperature of the atmosphere. When steam is again admitted, a portion of it will condense in this cold cinder, and the formation of the condensing stratum, having once begun, increases so rapidly that it is usually found desirable to clean the fire about every four hours—removing a large quantity of half-burned fuel.

The comprehensive correction of this trouble requires an even distribution throughout the fuel-bed of that temperature at which the steam is, in the time fixed by the capacity of the apparatus, most economically converted into gas. This is accomplished with almost theoretical perfection (disregarding the cooling of the top of the fire caused by charging) by periodically reversing the current of steam in the generator, for which purpose means have been devised that materially lessen, instead of increase, the labor and responsibility of gas making. This practically eliminates the second and third of the unfavorable features mentioned at the outset.

By way of illustration, it may be interesting to know that important works in the vicinity of New York have, by revising the apparatus upon the lines already described, reduced the consumption of generator fuel per 1,000 feet during the past twelve months to two-thirds of the quantity used during the previous year. The same changes are being made at all other works under that management.

The fourth unfavorable feature upon the list concerns the vital question of oil economy. Up to within a comparatively few years the enriching oil was fed into the generator. This answered fairly well for extremely volatile distillates, such as high-grade naphtha; but when the use of cheap crude oils and heavy distillates was attempted the necessity for change became evident. It was seen that the work of the apparatus was unfairly distributed. The generator was greatly overtaxed, resulting in diminished yield and increased fuel and carbon dioxide; while the service performed by the fixing chamber was not sufficient to absorb the carbon monoxide contained in the generator blast products. As a natural consequence, some of the work then performed in the generator has been transferred to the fixing chambers through the development of the present carbureter. This carbureter was originally introduced more to relieve the generator of work other than the decomposition of the steam, than to effect direct saving in oil; indeed, it was predicted, by those seeing some mysterious advantage in the exposure of the oil to the nascent hydrogen in the generator, that decreased oil efficiency would follow.

The actual results from the change so far exceeded the expectations of the most sanguine that it may be well to dwell a moment upon the circumstances. Owing to fresh fuel—usually cold—being fed periodically into the generator, the top foot or two of the fuel-bed is subject to wide variations in temperature, however uniformly the heat may be distributed in the active portion of the fire. For instance, shortly before charging, the entire fuel-bed is in a condition to decompose steam; while immediately after charging, the top couple of feet are quite cold. It is clear, then, that oil introduced at the generator top is at the one time exposed to a heat that often proves destructive, while at another it saturates the cold fuel like a sponge, to be driven off during the succeeding blast. In the carbureter, however, with the temperature regulated at will, regardless of generator variations, the oil can be volatilized under heat conditions of maximum economy in the beneficial atmosphere of the hot water gas.

In spite of the improvement due to the introduction of the carbureter, the fourth of the unfavorable features mentioned still prevailed. The sources of this trouble are threefold: First, the imperfect distribution of the entering oil over the cross section of the carbureter; secondly, the absorption of the oil, owing to the porosity of the checker bricks and the consequent carbonization and disintegration of the latter; and, thirdly, the absence of an efficient and durable oil pre-heater. Added to these is the possibility, where very heavy non-volatile oils are used, of a portion of the oil reaching the bottom of the carbureter in a liquid condition and accumulating as an oily tar, to be burnt away in the succeeding blast.

The first and second of these difficulties have been largely overcome by Mr. C. R. Collins, of Philadelphia, whose oil-spraying device and method of filling the carbureter are highly valuable improvements. The third difficulty—largely a matter of detail—was readily removed when it received the proper attention; while a considerable addition to the height of the carbureter now ensures the entire vaporization of the oil, and its complete passage to the superheater for conversion into permanent gas.

The fifth, and last, unfavorable feature on the list invites special provision in the design of the apparatus for the more advantageous use of gas coke. Anthracite coal, being nearly twice as heavy as coke, and storing therefore in a given space, nearly twice the capacity for steam decomposition can, it is evident, be worked advantageously under conditions most unsuited to the use of coke. This circumstance being once intelligently recognized, the evolution of an apparatus using indiscriminately coal or coke to equal advantage has not been difficult. The minor losses, due, as shown in the table, to radiation and "convection," have been recently halved by increasing the thickness of linings and non-conducting fillings.

The writer has purposely avoided tedious description of the progressive steps in the development of water-gas apparatus; but, in general, it may be said that while trial and error afforded the first bases for attempted improvement, the principles underlying the operation of the apparatus have latterly become so well understood and experimental data so complete, that its latest revision has been made with a scientific regard for cause and effect that places the aparatus upon a par with any modern type of heat engine.

ITEMS OF INTEREST FROM VARIOUS LOCALITIES.

THE authorities of Honolulu, Island of Hawaii, recently determined to offer for sale at public auction a franchise for the operation of an electric lighting plant in that town, the purchasers to have the right to a monopoly of the supplying of electric currents for a term of 10 years. In due time the sale was held, and the successful bidder was the Hawaiian Electric Company, whose agent (Mr. W. W. Hall) offered the upset price of 2½ per cent. per annum on the gross receipts.

DOCUMENTS announcing the consolidation of the Cooperstown (N.Y.) Gas Company and the Cooperstown Electric Company have been filed with the Secretary of State. The combined enterprise is to be known as the Cooperstown Gas and Electric Company, and the capitalization is returned at $25,000. The Directors elected are: Charles B. Staats, of Albany, and Lee B. Cruttendon, Oliver R. Butler, James Bunyan and Paul T. Brady, of Cooperstown. It is to be hoped that this agreement will put an end to the troubles that have beset both companies for the past two or three years.

MR. W. H. HAYDEN, Superintendent of the Bath (Me.) Gas and Electric Company, writing under date of the 26th of May, says: "A contract to build and equip the Bath Street Railway has been signed. The track will be 4½ miles in length. The Worcester Construction Company is to build the roadbed complete and ready for the rolling stock; the Pierce Construction Company, of Boston, will construct the overhead equipment, and the electrical equipment will be in charge of the Westinghouse Company. Messrs. A. H. Shaw, G. C. Moses and F. H. Twitchell are the promoters. The power is to be furnished by the Bath Gas and Electric Company. Work commences on Monday, May 29th, and the road is to be completed by August 1st, 1893."

ACCORDING to the Baltimore *World*, last winter Marshal Frey received many complaints concerning a well dressed young Englishman who was going about in the guise of a collector for the Consolidated Gas Company. In fact, scarcely a day passed that several complaints did not reach police headquarters from persons who had paid their gas bills to the bogus collector. The aggregate amount of money thus obtained was a large one, and although the police made every possible effort to capture the rascal, he evaded them cleverly, and, finding the field was being closely watched, eventually he determined to suspend operations, for nothing was heard about his peculations for some time. A week or so ago, however, he evidently returned to his roguery, for several complaints have been received at police headquarters, and all of the swindled are residents of the western and northwestern sections of the city. A fairly good description of the swindler has been obtained, and the detective bureau are confident that they will soon have him stowed away safely in jail. Among his possessions is a bogus badge similar to that worn by the collectors of the Consolidated Company.

WE are indebted to a correspondent at Rochester, N. Y., for the following: "It was a good sized and very enthusiastic company at the Library lecture room, Buffalo, that listened some evenings ago to the rea-

sons given by Prof. E. A. Ross, of Cornell, in favor of municipal ownership of the local water and lighting plants. The address being under the auspices of the Municipal Ownership League, President J. N. Adam took the chair, and after alluding to the tactics by which the franchise of the Queen City Gas Company was 'sneaked into the Assembly' and passed 'in a sudden and surreptitious manner,' Mr. Adam said: 'Our contention is that gas could be furnished for very much less than $1, or even less than 75 cents per 1,000. We are anxious to get this question before the public, and see if we are getting our light at fair prices.' Prof. Ross said it was his business to look into the cost of gas, to compare municipal with other service. He was paid to know of such things in French and German cities, as well as at home, and it was in that capacity he appeared before his auditors. Calling attention to the fact that our cities were now something more than clusters of houses or large villages, he outlined the development of methods of supplying water, light and transportation, noting that some municipal services were generally attended to by the city—the health and fire departments, in which there is no money, were among these. After remarking on the need of water and gas, the professor said gas was so outrageously high that the people did not really know its use. Continuing, he said: 'In England they are beginning to learn. Our stoves utilize but 20 per cent. of the heat, whereas a gas stove utilizes 80 per cent. Gas is driving out steam in low power engines. Low prices of gas, therefore, help the small manufacturer to work alongside the large one. Gas has no smoke, and we know that some cities are almost uninhabitable from smoke. We want, not more policemen on our streets at night, but more lights. Lighting has been almost a monopoly everywhere, because large capital is needed to start in the gas business, and also because the lights cannot be detached from the works. We cannot buy gas over the country, and it does not pay to pipe manufactured gas over the country. A boot and shoe factory can ship its goods all over the country; hence, new capital is slow in going into competition with an old gas company. A third point that makes gas a monopoly is that a new company stands at a special disadvantage in opposing an old one, and a fourth is that the distribution of gas is difficult. Now, as to the practical side. London at one time had the pipes of six gas companies in the same streets. In that city it was proved that competition in gas is not possible, and Parliament at length drove the companies into districts. Competition in such things is simply a war in which one party must give in; and gas companies always combine at length, for that means prosperity. We must recognize this, and choose between public monopoly and private monopoly. Which shall we have? A private monopoly is simply a system of stealing from the people. When the city gives its people over to the hands of a gas monopoly it simply betrays them.' The Professor objected to charging a bonus, or regulating the maximum price, or taxing the income of a gas company on the ground that the fixing of the price of gas by the City Council would keep the gas companies from operating in any but a hand to mouth way; and if the price were fixed on the principle in which it had been settled in Cleveland, Ohio, he thought injustice would be done the gas company. Continuing, he remarked: 'A city can borrow money cheaper than a corporation, and it pays lower wages. A corporation must risk bankruptcy and ruin, and must pay boodle sometimes, all of which a city escapes. The American cities own 41 per cent. of their water works, and the private water companies charge from 33 to 43 per cent. more than the city works do. So well known is this that the city with no water works of its own is looked down upon. Private companies care little for the quality of the water; what they want is profit. There are 10 cities in the United States owning gas works. Henderson, Ky., is one of these, and has the cheapest * gas in the State. Two cities in Ohio (Bellefontaine and Hamilton) have $1 and 80 cent gas. In Virginia, which has five city gas plants, the showing is decidedly in favor of city gas. The cities of Phila., Pa., and Richmond, Va., with rather high public gas rates, make large profits that go to stave off taxes. The United States has 29 cities with public electric light plants and the cost averages 22 per cent. below the average of private lighting. Private companies had no interest in improving their plants, unless they could at once profit by the change. Public ownership meant the diminution of corruption. It is the private company that has to look into the make up of Common Councils. Some say this public ownership is interfering with private business; but the assertion is absurd, for everybody interfered with someone else when he undertook to supply himself with a new article. This was merely a manner of self-help, and should be encouraged. The objection raised that these things are promotive of too much government was overturned when it was remembered that this was business merely and not government. It was not even paternalistic. It was merely republicanism—a State taking care of itself. We do not want city bread or city groceries, because at present it wouldn't pay to have them. We do want city gas, because it is cheaper that way, and that is enough. The post office and the public school are socialistic, but city gas is not, unless the price is put so high or so low as not to meet expenses. There will be no difficulty in finding out when they have gone far enough. Nobody need be troubled over that. In his summing up the speaker briefly restated his beliefs and closed his argument by remarking that the more closely the subject of the municipal control of gas supply was studied, the more urgent seemed the need of taking up such control. In the discussion that followed, Messrs. Frank M. Loomis, A. W. Hickman, Millard E. Burns and C. B. Matthews were among those who spoke. All save the first named favored the Professor's views, but Mr. Loomis objected to municipal control on the ground that it afforded an opportunity for enlarging the number of the office-holding class. He (Mr. Loomis), however, did believe in the regulating of gas prices by the local governments. In replying to Mr. Loomis Professor Ross said there was more politics in the conduct of private service than in the public service of cities; further, that if public ownership were not the best, statistics would not show it to be the cheapest.

*The Professor is in error here, for a large portion of the gas sold by the Louisville Gas Company nets it less than $1.20 per 1,000, and all fuel gas nets it only 75 cents per 1,000; whereas the rate for both uses at Henderson is $1.25 per 1,000. The rate at Bellevue for all purposes is $1.25; Covington sells gas for fuel at $1.25, and supplies the public lamps at $1 per 1,000; at Maysville the fuel gas rate is $1.12½; at Owensboro the fuel rate is $1.—Eds. A. G. L. J.

MESSRS. DAVID H. MOFFAT, Stephen W. Dorsey, George C. Corning, John C. Montgomery and Willard C. Teller, about a fortnight ago, filed articles incorporating the National Gas Company, of Denver, with a capital stock of $1,000,000. The articles specify that the principal office of the company shall be in Denver, with branch offices in Chicago and New York.

THE water gas auxilliary plant for the Covington (Ky.) Gas Light Company, which was constructed by the Western Gas Construction Company, of Fort Wayne, Ind., is giving good satisfaction.

THE proprietors of the Chapman Valve Manufacturing Company inform us that their exhibit at the World's Fair is located in Machinery Hall, Main 26, K-28, where they will be pleased to receive every gas man that visits Jackson Park. The exhibit of straightway valves and fire hydrants is a most complete one. The company also invites an inspection of the Jackson Park power station of the Western Dummy Electric Railroad, which is equipped throughout with the Chapman valves.

SOME days ago the laboring staff (18 in all) of the Newton and Watertown (Mass.) Gas Light Company demanded a full day's pay for nine hours' work. The demand was refused, whereupon they stopped work. Mr. Learned had no trouble in replacing them.

WE understand that the entire floating indebtedness of the South Boston (Mass.) Gas Light Company has been paid off.

MESSRS. ERMENTROUT & RUHL, acting as counsel for Mrs. Moore, of Reading, Pa., have commenced an action for damages against the Consumers' Gas Company of that city. Plaintiff alleges that plants valued at $3,000 nurtured at her greenhouses were destroyed by gas that escaped from one of the mains of the company.

THE friends of General Morris Schaff, of Pittsfield, Mass., are urging Governor Russell to appoint him on the State Board of Gas and Electric Light Commissions, on the expiration of the current term of Commissioner Towne, of Orange. It looks to us that Commissioner Towne's record as a Commissioner is an excellent one.

THE following was forwarded by "Observer": "The Superintendent (Mr. G. D. Bill) and Directors of the Malden and Melrose (Mass.) Gas Light Company were much provoked at a report recently printed that the Company had agreed to reduce the price of gas 10 cents per 1,000 cubic feet. Mr. Bill states that on May 19th representatives of the towns of Malden, Melrose, Everett and Medford, all of which take their gas from the Malden and Melrose Company, had a conference with the Directors to determine if it were not possible to secure a lower net rate of $1.80 per 1,000 for illuminating purposes, and $1.50 for fuel uses. The Company's books were examined and the inspection showed that the cost to the Company of its gas was $1.59 per 1,000, wherefore a loss of 9 cents per 1,000 on all gas sold for fuel purposes was proved. Mr. Bill, however, stated that the Directors had decided to grant a reduction of 10 cents on the gas used in the municipal buildings of Malden, Mel-

rose, Everett and Medford, which is the only concession that the Company can possibly grant."

ARCHITECT CHARLES E. BARNES has completed the plans for the new buildings that the Marlboro (Mass.) Company is about to erect.

MESSRS. M. H. ARNOT, C. M. Thompkins and others of Elmira, N.Y., have incorporated the Elmira Gas Company, of Horseheads, N. Y. The capital is put a $10,000. Horseheads is on the Chemung Canal, at a point 5½ miles north of Elmira. It has a population of perhaps 4,000, and is quite a busy place. It is also possible that the proprietors of the new Company will pipe their gas to Horseheads from the works of the Company at Elmira.

THE Elwood Gas Stove and Stamping Company, of Elwood City, Pa., is putting on the market a very handsome line of gas cookers. These wares are beautifully finished. The President of the Company is Mr. H. W. Hartman, and its Treasurer is Mr. H. E. Higgins, who, if we mistake not, is a brother of Mr. C. M. Higgins, the clever manager of the naphtha sales department of the Standard Oil Company, at the New York City headquarters.

WE are indebted to "W. N. M." for the following from San Francisco, under date of May 20th: "Every housewife in the city who toils daily over a hot, smoking cook stove, and who sometimes finds life a burden by reason of its presence in the kitchen, will hail with joy any device which will not only lighten her labors, but effect a saving of over 40 per cent. in the cost of fuel. All this and more may be realized by the use of the gas stoves now on exhibition in the new rooms of the San Francisco Gas Light Company, at 226 Post street. It has been said that food cannot be cooked by gas without being tainted. This statement is groundless. The method of broiling a steak by a smokeless, air-mixed gas flame is conceded by the best cooks to be the most perfect known. Who will mourn the exit of the coal stove and range before the incoming gas appliances for heating and cooking? Wherever the gas stove is used, the wife no longer carries coal and ashes, nor does she arise two hours earlier to struggle with a fire. On the contrary, a match does the work in an instant, and before her biscuits are ready the stove is prepared to perform its duty. The display of gas stoves in the Gas Company's office is an attractive one. Their prices vary from $2 to $40, and they may be secured in sizes to suit the largest and smallest families. The advantages of gas as a fuel for cooking are manifold. In the first place it costs less than coal, and is preferable therefore on economic grounds. It saves labor, is clean, and performs prompt and efficient work. With a gas stove, breakfast or supper may be prepared within 20 minutes, and dinner in proportion, no matter how large the family would be. Meats roasted by gas lose only one-seventh of their weight, while by the use of coal they lose one third. Another inestimable advantage is that the dust and dirt of the coal cooking stove are dispensed with, and any kitchen in which a gas stove is used may be utilized by the family for a sitting room. A great number of these gas stoves are now in use in San Francisco, and the demand for them is constantly on the increase. People like them because their use effects a saving. The cost of gas varies from 2 to 4 cents an hour for each stove, according to size, while the coal for the same stove costs from 3 to 5 cents an hour. Another feature of the Company's display is the patent asbestos grate, set in a mantel, and used for heating purposes. These are arranged and made to fit any grate, and consume between 3 and 5 cents worth of gas every hour. A number of leading office buildings in the city have been provided with these grates, the owners recognizing that by their use the principles of cleanliness and economy are sustained. A visit to the Company's rooms will be of profit to every householder. And Mr. L. A. Mitchell, the urbane Manager of this branch of the Company's business, is always in readiness to explain all about the cookers and heaters."

THE Continental Gas Company, of Chicago, has been incorporated by Messrs. Charles Springer, Ernest B. Stuart and Charles S. Corning. It is capitalized in $10,000,000. The objects as set forth are: "The manufacture of gas, oxygen gas, oxygen, electricity, and any and all means or agencies for the furnishing, production or distribution of light, heat, power or fuel, for any and all purposes, in the City of Chicago, or such other place or places in the State of Illinois, the United States, or any foreign country as the Board of Directors may elect; also, to deal in and operate the plants, property, good will, rights and franchises of other corporations organized for the same purpose, and to deal in patent rights."

THE plant and property complete of the Chatham (N. Y.) Electric Light Company is in the hands of the sheriff, through a judgment obtained against the concern by the General Electric Light Company for a balance of $11,732 due on a contract for apparatus purchased in 1890. The day named for the sale is July 6.

SUITS aggregating $19,000 were entered against the Consolidated Gas Company, of Baltimore, in the City Court, on May 27th, by John F. Tully, his wife and four children. Mr. Tully sues for $10,000, claiming that the gas service in his house, 814 Neighbor street, was so negligently handled by employees of the defendant Company that the gas escaped, and, being inhaled by the members of his family, they barely escaped asphyxiation. Mrs. Tully sues for $5,000, and the four children for $1,000 each. Miss Ann Tully, a sister of Mr. Tully, was suffocated by the gas, dying before any assistance could be rendered. Messrs. Porter & Johns are the plaintiffs' attorneys.

AN Act now before the Connecticut Legislature—it has been favorably reported by the Committee on Incorporations—bears the title of an "Act authorizing cities and other municipalities to establish plants for the manufacture of gas and electricity." The first and second sections are appended: "*Section I.*—Any city, town or borough may, under the limits of this Act, construct, purchase, lease, or establish and maintain within its limits, one or more plants for the manufacture and distribution of gas or electricity for furnishing light for municipal use, and for the use of such of its inhabitants as may require or pay for the same as herein provided. Such plants may include suitable lands, structures, casements, water privileges, stations, gasometers, boilers, engines, dynamos, tools, machinery, pipes, conduits, poles, conductors, burners, lamps and other apparatus and appliances for making, generating, distributing and using gas or electricity for lighting purposes. *Section II.*—No city shall exercise the authority conferred in Section I. until a vote for that purpose shall have been passed by each branch of its City Council by a two thirds vote, and received the approval of the Mayor in each of two consecutive municipal years, and thereafter been ratified by a majority of two thirds of the voters, voting thereon at the annual municipal election. When such vote has failed to secure ratification, no similar vote shall be submitted for ratification until after the expiration of five years thereafter."

IN the Suffolk County (Mass.) Supreme Court, before Judge Holmes, the Citizens' Gas Light Company submitted a bill in equity against the Town of Wakefield, under Chapter 320 of the Statutes of 1891, praying for the appointment of Commissioners to determine the cost of the complainant's plant to the town, and to enjoin the latter from purchasing, leasing or establishing a gas and electric lighting plant of its own; that the second of said meetings [as provided for in the Statutes] was held not less than two nor more than thirteen months after the first; that the Directors of complainant, within 30 days after the second meeting, as required by said act, did elect to sell its plant to the town, filed a schedule of its property, and the price at which it would sell, which was $200,000, but the town, on October 3, 1892, voted not to agree to the offer of complainant. The respondent answers that the Company is not lawfully engaged in the gas and electric lighting business at Wakefield, not having been granted special authority to erect its poles in fixed locations, denies its authority to file schedule, and says the one filed is insufficient in law or in fact, and denies the election of complainant to sell was within 30 days after the town voted to establish a plaint of its own, defendant asserting that the votes passed were merely to the length that it was expedient to establish a plant of its own but not actually voting to do so. This being the first case under the act, after opening it was agreed that it might be reported to the full court upon the facts above substantially set forth. Messrs. E. R. Champlin and C. R. Darling appeared for complainant, and defendant was represented by Mr. S. K. Hamilton.

THE State Inspector of Gas Meters (Mr. Clinchy) has appointed Assemblyman John J. Clahan, of Buffalo, a deputy inspector of meters, under the absurd law passed at the last session of the legislature.

THE annual meeting of the Clarksville (Tenn.) Gas Light Company was held last month. The Superintendent reported the completion of a new set of purifiers, scrubbers, washer, condensers, etc., and an increase in the output over the previous year of more than 20 per cent. The usual dividend was declared. The following Directors were elected: Capt. F. P. Gracey, Hon. D. N. Kennedy, and Messrs. B. F. Owen, T. C. Hopper and T. Bourne. The officers elected were: President, Capt. Gracey; Treasurer, D. N. Kennedy; Secy. and Supt., Thos. Bourne. A lower schedule of prices will soon be issued, to take effect Sept. 1st next.

The Market for Gas Securities.

The spurt at the close of last week in Consolidated gas, occasioned by the declaration for the quarter of a 2 per cent. dividend, was short lived, the shares to day (Friday) being quoted at 129½ to 130. Were it not for the uncertain state of the money market Consolidated would be selling at 150, and it is worth every cent of that value. Equitable is dull and lower, at 175 to 185, and Mutual is also somewhat depressed, at the nominal values of 139 to 142. Standard shows no change, and we believe it to be cheap at the quoted offering prices—40 for the common and 85 for the preferred.

The market for Brooklyn shares is absolutely lifeless and quotations are entirely perfunctory. In all classes the rated values are no real index of the worth of the shares, which to us seemingly are purchases, notably old Brooklyn, that is said to be offered at 113. Equity shares and bonds are still bones of contention between the contending factions, and it does seem a pity that the Gas Company proprietors do not act more like people who, owning valuable property, are anxious for its development. Chicago gas is weak at 70½ to 70¾, and Baltimore Consolidated is offered at 58. The dividend rate for this year on the stock is 5 per cent. Bay State is dull and neglected, at 19½ to 20. The Equitable Company, of Memphis, Tenn., has declared a dividend for the past quarter of 1 per cent.

DIVIDEND NOTICE.

OFFICE OF THE AMERICAN GAS COMPANY,
222 SOUTH THIRD ST., PHILA., PA., May 25, 1893.

The Board of Directors of the American Gas Company have this day declared a semi-annual dividend of 3 per cent., or $3 per share, on the capital stock of the Company, payable on and after June 1st, 1893. MORRIS W. STROUD, Treasurer.
939-1

WANTED,

A Competent Foreman for Water Gas Plant (Lowe Apparatus.)

One of some years' experience in gas works. State experience.
939-2 Address "C.," care this Journal.

WANTED,

Position with Gas Company.

Four years' experience as Superintendent of Gas and Electric Light Company. Good bookkeeper. Best of references. Address W. C. THOMSON,
938-4 Spartansburg, S. C.

WANTED

Position as Superintendent of Gas Works,

by a man of 15 years' experience. First-class reference. Address "G.," care this Journal.
938-4

Position Wanted.

Young man wants position as Superintendent of Gas Works in a Western or Southern city or town with good prospects. Might take a works on lease. At present in charge of an Eastern gas plant. Best of references can be obtained from officials of the Company in which he has been employed for the past 6 years. Present salary no object provided a satisfactory opening can be found. Address "L. W.," care this Journal.
937-3

WANTED,

Three or Four Purifying Boxes,

Not less than 8 feet square.

Address CAPITAL GAS AND ELECTRIC LT. CO.,
935-6 Frankfort, Ky.

Position Wanted

AS SUPERINTENDENT OF A GAS WORKS

by a man fully competent in all respects, and who has had 20 years' experience. Best of references.
937-3 Address "D.," care this Journal.

WANTED,

A young, active man, with sufficient knowledge of the gas business

To Take Charge of a Small Gas Works,

set meters and stoves, run services, take statements and make collections. Address, giving age, experience and references
937-3 "A. O. C.," care this Journal.

FOR SALE,

Two Ten-Inch Dry Center Seals,
in good condition, and one
Small Multitubular Condenser,
4 ft. diameter and 14 ft high.
For particulars inquire of FRED. BREDEL, C.E.,
929-tf 118 Farwell Ave., Milwaukee, Wis.

FOR SALE,

Two Westinghouse Engines, of 12 H.P. each.

Ten 12-inch Chapman Valves.

All in good order. Address NEW HAVEN GAS LT. CO.,
922-tf New Haven, Conn.

A GOOD, SAFE INVESTMENT.

FOR SALE—Consolidated Gas and Electric Light Plants,

doing a good business in the best town in Southwest Missouri. For further particulars address Lock Box 593,
933-8 Fort Scott, Kansas.

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Analytical and Consulting Chemist.

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OF THE ACCOUNTS OF THE PRINCIPAL GAS UNDERTAKINGS IN ENGLAND, SCOTLAND AND IRELAND FOR THE YEAR 1892, BEING THE 24TH YEAR OF PUBLICATION.

Compiled by **JOHN W. FIELD,** Accountant to The Gas Light and Coke Company, London.

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in good order, with 6-inch Connections and Dry Center-Seal Will sell separately or together.

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